REMARKS

This application has been carefully reviewed in light of the Office Action dated April 7, 2004. Applicant respectfully requests reconsideration of the above-referenced application in light of the following remarks.

Claims 87, 89-90, and 93 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Fritz. Reconsideration is respectfully requested.

The claimed invention is directed to a method of forming a "structure for supporting an integrated circuit chip . . . said method comprising: forming a substrate; forming a layer of magnetic field shielding material over said substrate; forming an insulating layer over said layer of magnetic field shielding material; providing a support surface for an integrated circuit chip, said substrate, layer of magnetic field shielding material, insulating layer and support surface forming part of a chip carrier; and supporting an integrated circuit chip with said chip carrier, said chip carrier having a top and bottom surface." as recited in claim 87.

In contrast to the claimed invention, Fritz relates to a low pass RF filter in which a layer of dielectric material is deposited on a ferrite substrate to form a filter (Col. 1, lines 10-12). Fritz is not directed to a structure that supports an integrated chip. Fritz's FIG. 8 merely teaches a modification of the disclosed filter strip. FIG. 8 illustrates layers 30, 31, and 32 as conductive metal coatings. Layers 33 and 34 are ferrite and layers 35 and 36 are barium titanate. Metal layer 30 may be the conductor and metal coatings 30 and 32 are ground. Elements 31, 34, 36, and 32 are not substrates, within the meaning of the claim language, as the Office Action asserts. Element 33 is not a layer of magnetic field shielding material as the Office Action asserts. Element 35 is not an insulating layer formed over a layer of magnetic field shielding material as the

Office Action asserts. Element 30 is not a support surface for an integrated circuit chip as the Office Action asserts. Elements 30-36 do not form a chip carrier as the Office Action asserts. Element 21 is not an integrated circuit chip as the Office Action asserts.

For instance, Fritz's FIG. 6 illustrates a coated strip of ferrite used as a filter strip for a circuit board. Element 21 is connected to the RF filter strip 16 by lead 23 and is not an integrated circuit chip. Accordingly, the RF filter strip 16 does not support an integrated circuit chip as the Office Action asserts. There is no chip carrier disclosed in Fritz whatsoever. The claimed invention and the cited reference share nothing in common with each other.

As illustratively shown in the exemplary embodiment of Applicant's FIG. 6, a printed circuit board 400 is illustrated electrically connected to a chip carrier through solder balls 280. Applicant's claimed chip carrier comprises substrate 120, a magnetic field shielding layer 113 formed over the substrate 120, and an insulating layer 140 formed over the magnetic field shielding layer 113. All of which is illustrated in Applicant's FIG. 6. This is a completely different structure from the RF filter disclosed in Fritz (FIGS. 6-8).

Accordingly, as noted, Fritz does not teach or suggest Applicant's claimed chip carrier for supporting an integrated circuit chip. Claims 88-90 and 93 depend from claim 87 and are allowable for at least the reasons set forth above with regard to independent claim 87. Withdrawal of the § 102(b) rejection is respectfully solicited.

Claims 88 and 98-99 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fritz in view of Dahringer. Reconsideration is respectfully requested.

Claims 88 and 98-99 depend from claim 87. For at least the reasons provided above, Fritz does not teach or suggest claim 87. In particular, Fritz does not teach or suggest a chip carrier or a support surface for an integrated circuit chip. Fritz is directed to an entirely different structure: a RF filter. Dahringer is relied upon for disclosing a second layer of magnetic field shielding material on the top and bottom of a chip carrier and adds nothing to rectify the deficiencies of Fritz. Further, Fritz does not even teach or suggest a chip carrier.

Dahringer discloses a metallized flexible enclosure around an electronic product such as a printed circuit board (Col. 4, lines 37-40). Dahringer's FIG. 7, element 52 is not a second layer of magnetic field shielding material. Element 52 is merely a metallic layer. Element 10 is the PCB formed within the metallized flexible enclosure 50 (FIG. 7). Element 54 is an inner polymer layer that is thermally bonded to melt directly to the PCB 10 at the PCB area 60. There is no motivation to combine Dahringer with Fritz, since Fritz discloses a RF filter strip attached to a PCB board. There is also no motivation to enclose Fritz's PCB board using the Dahringer metallized flexible enclosure.

Claims 91-92 and 94-96 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fritz in view of Tracy. Reconsideration is respectfully requested.

Claims 91-92 and 94-96 depend from claim 87 and are allowable for at least the reasons set forth above with regard to independent claim 87. In particular, Fritz's structure is completely different: a RF filter. Tracy is relied upon for disclosing a magnetic RAM device and magnetic materials and adds nothing to rectify the deficiencies of Fritz. The two references are completely non-analogous.

Tracy teaches a "non-volatile magneto-resistive memory positioned on a substrate and a passivation layer at least partially surrounding the non-volatile magneto-resistive memory." (Col. 2, lines 18-21). There is no motivation to combine the teachings of a non-volatile magneto-resistive memory device with a RF filter. Further, Tracy discloses a passivation layer 18 formed either on the "the surface of cell 10 or a thin layer 17 of dielectric material." (Col. 5, lines 5-7). This would defeat the very purpose of Fritz in which a thin coating of a dielectric material is formed on a ferrite substrate.

Claim 97 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Fritz in view of Higgins, III. Reconsideration is respectfully requested.

Claim 97 depends from claim 87 and is allowable for at least the reasons set forth above with regard to independent claim 87. In particular, Fritz's structure is completely different: a RF filter and does not teach or suggest a chip carrier. Higgins, III is relied upon for disclosing a second layer of magnetic field shielding material formed on a chip electrically coupled to a chip carrier, and adds nothing to rectify the deficiencies associated with Higgins, III. As discussed above, Fritz simply does not teach or suggest a chip carrier. Fritz's structure is a RF filter.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

By_____

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